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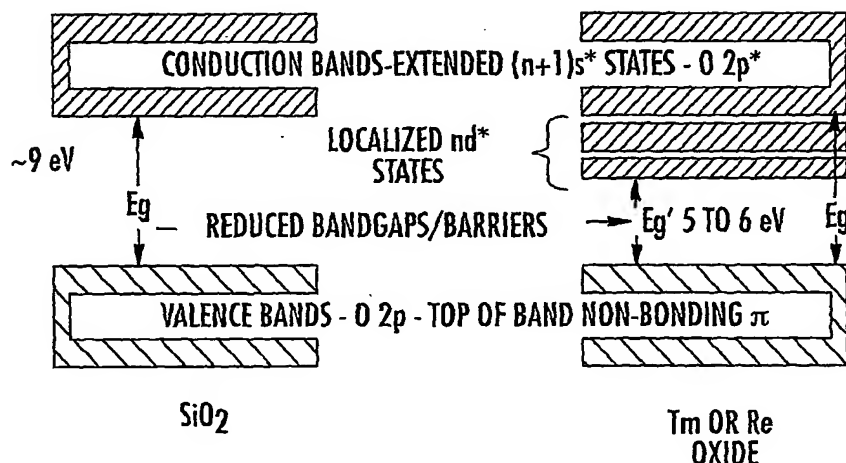
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(54) Title: **COMPLEX OXIDES FOR USE IN SEMICONDUCTOR DEVICES AND RELATED METHODS**



(57) Abstract: A semiconductor device includes a semiconductor substrate, a first oxide layer on the semiconductor substrate including an element from the semiconductor substrate, and a second oxide layer on the first oxide layer opposite the semiconductor substrate. The second oxide layer includes a stoichiometric, single-phase complex oxide represented by the formula:  $A_h B_j O_k$ , or equivalently  $(A_m O_n)_a (B_q O_r)_b$  in which the elemental oxide components,  $(A_m O_n)$  and  $(B_q O_r)$  are combined so that  $h = j$  or, equivalently,  $ma = bq$ , and  $a, b, h, j, k, m, n, q$  and  $r$  are non-zero integers; and wherein: A is an element of the lanthanide rare earth elements of the periodic table or the trivalent elements from cerium to lutetium; and B is an element of the transition metal elements of groups IIIB, IVB or VB of the periodic table.



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